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Sequence Listing could not be accepted due to errors.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: Keisha Douglas

Timestamp: Mon Oct 22 17:32:19 EDT 2007

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\*\*\*\*\*

Reviewer Comments:

Ile Ala Gly Ser Ala Thr Val Lys Ile Gly Glu Lys Val His Glu Ile  
245 250 255

Gly Ile Ala Gly Lys Gln  
260

1

1

Please delete the above end of file errors at the end of sequence id#12.

\*\*\*\*\*

Application No: 10574424 Version No: 1.0

**Input Set:****Output Set:**

**Started:** 2007-10-03 15:38:28.689  
**Finished:** 2007-10-03 15:38:30.099  
**Elapsed:** 0 hr(s) 0 min(s) 1 sec(s) 410 ms  
**Total Warnings:** 12  
**Total Errors:** 4  
**No. of SeqIDs Defined:** 12  
**Actual SeqID Count:** 12

Error code	Error Description
W 402	Undefined organism found in <213> in SEQ ID (1)
W 402	Undefined organism found in <213> in SEQ ID (2)
W 402	Undefined organism found in <213> in SEQ ID (3)
W 402	Undefined organism found in <213> in SEQ ID (4)
W 402	Undefined organism found in <213> in SEQ ID (5)
W 402	Undefined organism found in <213> in SEQ ID (6)
W 402	Undefined organism found in <213> in SEQ ID (7)
W 402	Undefined organism found in <213> in SEQ ID (8)
W 213	Artificial or Unknown found in <213> in SEQ ID (9)
W 402	Undefined organism found in <213> in SEQ ID (10)
W 402	Undefined organism found in <213> in SEQ ID (11)
W 402	Undefined organism found in <213> in SEQ ID (12)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (12)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (12)

# SEQUENCE LISTING

<110> CONTORNI, Mario

<120> LIQUID VACCINES FOR MULTIPLE MENINGOCOCCAL SEROGROUPS

<130> PP021401.0012

<140> 10574424

<141> 2007-10-03

<150> GB0323102.4

<151> 2003-10-02

<150> GB0412052.3

<151> 2004-05-28

<160> 12

<170> SeqWin99, version 1.02

<210> 1

<211> 350

<212> PRT

<213> N. meningitidis

<400> 1

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Phe	Cys	Ser	Gly	Ala	Leu	Ala	Ala	Thr	Asn	Asp	Asp	Asp	Val	Lys	Lys
			20					25					30		

Ala	Ala	Thr	Val	Ala	Ile	Ala	Ala	Ala	Tyr	Asn	Asn	Gly	Gln	Glu	Ile
		35						40				45			

Asn	Gly	Phe	Lys	Ala	Gly	Glu	Thr	Ile	Tyr	Asp	Ile	Asp	Glu	Asp	Gly
50					55					60					

Thr	Ile	Thr	Lys	Lys	Asp	Ala	Thr	Ala	Ala	Asp	Val	Glu	Ala	Asp	Asp
65					70					75				80	

Phe	Lys	Gly	Leu	Gly	Leu	Lys	Lys	Val	Val	Thr	Asn	Leu	Thr	Lys	Thr
			85					90						95	

Val	Asn	Glu	Asn	Lys	Gln	Asn	Val	Asp	Ala	Lys	Val	Lys	Ala	Ala	Glu
			100					105					110		

Ser	Glu	Ile	Glu	Lys	Leu	Thr	Thr	Lys	Leu	Ala	Asp	Thr	Asp	Ala	Ala
		115					120						125		

Leu	Ala	Asp	Thr	Asp	Ala	Ala	Leu	Asp	Ala	Thr	Thr	Asn	Ala	Leu	Asn
		130					135					140			

Lys	Leu	Gly	Glu	Asn	Ile	Thr	Thr	Phe	Ala	Glu	Glu	Thr	Lys	Thr	Asn
145					150					155					160

Ile Val Lys Ile Asp Glu Lys Leu Glu Ala Val Ala Asp Thr Val Asp  
 165 170 175

Lys His Ala Glu Ala Phe Asn Asp Ile Ala Asp Ser Leu Asp Glu Thr  
 180 185 190

Asn Thr Lys Ala Asp Glu Ala Val Lys Thr Ala Asn Glu Ala Lys Gln  
 195 200 205

Thr Ala Glu Glu Thr Lys Gln Asn Val Asp Ala Lys Val Lys Ala Ala  
 210 215 220

Glu Thr Ala Ala Gly Lys Ala Glu Ala Ala Ala Gly Thr Ala Asn Thr  
 225 230 235 240

Ala Ala Asp Lys Ala Glu Ala Val Ala Ala Lys Val Thr Asp Ile Lys  
 245 250 255

Ala Asp Ile Ala Thr Asn Lys Asp Asn Ile Ala Lys Lys Ala Asn Ser  
 260 265 270

Ala Asp Val Tyr Thr Arg Glu Glu Ser Asp Ser Lys Phe Val Arg Ile  
 275 280 285

Asp Gly Leu Asn Ala Thr Thr Glu Lys Leu Asp Thr Arg Leu Ala Ser  
 290 295 300

Ala Glu Lys Ser Ile Ala Asp His Asp Thr Arg Leu Asn Gly Leu Asp  
 305 310 315 320

Lys Thr Val Ser Asp Leu Arg Lys Glu Thr Arg Gln Gly Leu Ala Glu  
 325 330 335

Gln Ala Ala Leu Ser Gly Leu Phe Gln Pro Tyr Asn Val Gly  
 340 345 350

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 <211> 327  
 <212> PRT  
 <213> N. meningitidis

<400> 2

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 1 5 10 15

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 20 25 30

Thr Ile Tyr Asp Ile Asp Glu Asp Gly Thr Ile Thr Lys Lys Asp Ala  
 35 40 45

Thr Ala Ala Asp Val Glu Ala Asp Asp Phe Lys Gly Leu Gly Leu Lys  
 50 55 60

Lys Val Val Thr Asn Leu Thr Lys Thr Val Asn Glu Asn Lys Gln Asn  
 65 70 75 80

Val	Asp	Ala	Lys	Val	Lys	Ala	Ala	Glu	Ser	Glu	Ile	Glu	Lys	Leu	Thr	85	90	95
Thr	Lys	Leu	Ala	Asp	Thr	Asp	Ala	Ala	Leu	Ala	Asp	Thr	Asp	Ala	Ala	100	105	110
Leu	Asp	Ala	Thr	Thr	Asn	Ala	Leu	Asn	Lys	Leu	Gly	Glu	Asn	Ile	Thr	115	120	125
Thr	Phe	Ala	Glu	Glu	Thr	Lys	Thr	Asn	Ile	Val	Lys	Ile	Asp	Glu	Lys	130	135	140
Leu	Glu	Ala	Val	Ala	Asp	Thr	Val	Asp	Lys	His	Ala	Glu	Ala	Phe	Asn	145	150	155
Asp	Ile	Ala	Asp	Ser	Leu	Asp	Glu	Thr	Asn	Thr	Lys	Ala	Asp	Glu	Ala	165	170	175
Val	Lys	Thr	Ala	Asn	Glu	Ala	Lys	Gln	Thr	Ala	Glu	Glu	Thr	Lys	Gln	180	185	190
Asn	Val	Asp	Ala	Lys	Val	Lys	Ala	Ala	Glu	Thr	Ala	Ala	Gly	Lys	Ala	195	200	205
Glu	Ala	Ala	Ala	Gly	Thr	Ala	Asn	Thr	Ala	Ala	Asp	Lys	Ala	Glu	Ala	210	215	220
Val	Ala	Ala	Lys	Val	Thr	Asp	Ile	Lys	Ala	Asp	Ile	Ala	Thr	Asn	Lys	225	230	235
Asp	Asn	Ile	Ala	Lys	Lys	Ala	Asn	Ser	Ala	Asp	Val	Tyr	Thr	Arg	Glu	245	250	255
Glu	Ser	Asp	Ser	Lys	Phe	Val	Arg	Ile	Asp	Gly	Leu	Asn	Ala	Thr	Thr	260	265	270
Glu	Lys	Leu	Asp	Thr	Arg	Leu	Ala	Ser	Ala	Glu	Lys	Ser	Ile	Ala	Asp	275	280	285
His	Asp	Thr	Arg	Leu	Asn	Gly	Leu	Asp	Lys	Thr	Val	Ser	Asp	Leu	Arg	290	295	300
Lys	Glu	Thr	Arg	Gln	Gly	Leu	Ala	Glu	Gln	Ala	Ala	Leu	Ser	Gly	Leu	305	310	315
Phe	Gln	Pro	Tyr	Asn	Val	Gly										325		

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 <211> 248  
 <212> PRT  
 <213> N. meningitidis

<400> 3  
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 20 25 30

Val Arg Lys Asn Glu Lys Leu Lys Leu Ala Ala Gln Gly Ala Glu Lys  
 35 40 45

Thr Tyr Gly Asn Gly Asp Ser Leu Asn Thr Gly Lys Leu Lys Asn Asp  
 50 55 60

Lys Val Ser Arg Phe Asp Phe Ile Arg Gln Ile Glu Val Asp Gly Gln  
 65 70 75 80

Leu Ile Thr Leu Glu Ser Gly Glu Phe Gln Val Tyr Lys Gln Ser His  
 85 90 95

Ser Ala Leu Thr Ala Phe Gln Thr Glu Gln Ile Gln Asp Ser Glu His  
 100 105 110

Ser Gly Lys Met Val Ala Lys Arg Gln Phe Arg Ile Gly Asp Ile Ala  
 115 120 125

Gly Glu His Thr Ser Phe Asp Lys Leu Pro Glu Gly Gly Arg Ala Thr  
 130 135 140

Tyr Arg Gly Thr Ala Phe Gly Ser Asp Asp Ala Gly Gly Lys Leu Thr  
 145 150 155 160

Tyr Thr Ile Asp Phe Ala Ala Lys Gln Gly Asn Gly Lys Ile Glu His  
 165 170 175

Leu Lys Ser Pro Glu Leu Asn Val Asp Leu Ala Ala Ala Asp Ile Lys  
 180 185 190

Pro Asp Gly Lys Arg His Ala Val Ile Ser Gly Ser Val Leu Tyr Asn  
 195 200 205

Gln Ala Glu Lys Gly Ser Tyr Ser Leu Gly Ile Phe Gly Gly Lys Ala  
 210 215 220

Gln Glu Val Ala Gly Ser Ala Glu Val Lys Thr Val Asn Gly Ile Arg  
 225 230 235 240

His Ile Gly Leu Ala Ala Lys Gln  
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 <211> 179  
 <212> PRT  
 <213> N. meningitidis

<400> 4  
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Asp Arg Arg Thr Thr Gly Ala Gln Thr Asp Asp Asn Val Met Ala Leu  
 20 25 30

Arg	Ile	Glu	Thr	Thr	Ala	Arg	Ser	Tyr	Leu	Arg	Gln	Asn	Asn	Gln	Thr			
		35					40					45						
Lys	Gly	Tyr	Thr	Pro	Gln	Ile	Ser	Val	Val	Gly	Tyr	Asn	Arg	His	Leu			
	50					55					60							
Leu	Leu	Leu	Gly	Gln	Val	Ala	Thr	Glu	Gly	Glu	Lys	Gln	Phe	Val	Gly			
65					70					75					80			
Gln	Ile	Ala	Arg	Ser	Glu	Gln	Ala	Ala	Glu	Gly	Val	Tyr	Asn	Tyr	Ile			
				85					90					95				
Thr	Val	Ala	Ser	Leu	Pro	Arg	Thr	Ala	Gly	Asp	Ile	Ala	Gly	Asp	Thr			
			100					105					110					
Trp	Asn	Thr	Ser	Lys	Val	Arg	Ala	Thr	Leu	Leu	Gly	Ile	Ser	Pro	Ala			
		115					120					125						
Thr	Gln	Ala	Arg	Val	Lys	Ile	Val	Thr	Tyr	Gly	Asn	Val	Thr	Tyr	Val			
	130					135					140							
Met	Gly	Ile	Leu	Thr	Pro	Glu	Glu	Gln	Ala	Gln	Ile	Thr	Gln	Lys	Val			
145					150					155					160			
Ser	Thr	Thr	Val	Gly	Val	Gln	Lys	Val	Ile	Thr	Leu	Tyr	Gln	Asn	Tyr			
			165						170					175				
Val	Gln	Arg																
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<213>	N. meningitidis																	
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1				5					10					15				
Asp	His	Phe	Asn	Thr	Ser	Thr	Asn	Val	Gly	Gly	Phe	Tyr	Gly	Leu	Thr			
			20					25					30					
Gly	Ser	Val	Glu	Phe	Asp	Gln	Ala	Lys	Arg	Asp	Gly	Lys	Ile	Asp	Ile			
	35						40					45						
Thr	Ile	Pro	Ile	Ala	Asn	Leu	Gln	Ser	Gly	Ser	Gln	His	Phe	Thr	Asp			
	50					55					60							
His	Leu	Lys	Ser	Ala	Asp	Ile	Phe	Asp	Ala	Ala	Gln	Tyr	Pro	Asp	Ile			
65					70					75					80			
Arg	Phe	Val	Ser	Thr	Lys	Phe	Asn	Phe	Asn	Gly	Lys	Lys	Leu	Val	Ser			
				85					90					95				
Val	Asp	Gly	Asn	Leu	Thr	Met	His	Gly	Lys	Thr	Ala	Pro	Val	Lys	Leu			
		100						105					110					

Lys Ala Glu Lys Phe Asn Cys Tyr Gln Ser Pro Met Glu Lys Thr Glu  
 115 120 125

Val Cys Gly Gly Asp Phe Ser Thr Thr Ile Asp Arg Thr Lys Trp Gly  
 130 135 140

Met Asp Tyr Leu Val Asn Val Gly Met Thr Lys Ser Val Arg Ile Asp  
 145 150 155 160

Ile Gln Ile Glu Ala Ala Lys Gln  
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 <211> 464  
 <212> PRT  
 <213> N. meningitidis

<400> 6

Ser Pro Asp Val Lys Ser Ala Asp Thr Leu Ser Lys Pro Ala Ala Pro  
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 20 25 30

Gly Ser Gln Gly Gln Gly Ala Pro Ser Ala Gln Gly Ser Gln Asp Met  
 35 40 45

Ala Ala Val Ser Glu Glu Asn Thr Gly Asn Gly Gly Ala Val Thr Ala  
 50 55 60

Asp Asn Pro Lys Asn Glu Asp Glu Val Ala Gln Asn Asp Met Pro Gln  
 65 70 75 80

Asn Ala Ala Gly Thr Asp Ser Ser Thr Pro Asn His Thr Pro Asp Pro  
 85 90 95

Asn Met Leu Ala Gly Asn Met Glu Asn Gln Ala Thr Asp Ala Gly Glu  
 100 105 110

Ser Ser Gln Pro Ala Asn Gln Pro Asp Met Ala Asn Ala Ala Asp Gly  
 115 120 125

Met Gln Gly Asp Asp Pro Ser Ala Gly Gly Gln Asn Ala Gly Asn Thr  
 130 135 140

Ala Ala Gln Gly Ala Asn Gln Ala Gly Asn Asn Gln Ala Ala Gly Ser  
 145 150 155 160

Ser Asp Pro Ile Pro Ala Ser Asn Pro Ala Pro Ala Asn Gly Gly Ser  
 165 170 175

Asn Phe Gly Arg Val Asp Leu Ala Asn Gly Val Leu Ile Asp Gly Pro  
 180 185 190

Ser Gln Asn Ile Thr Leu Thr His Cys Lys Gly Asp Ser Cys Ser Gly  
 195 200 205



Asn Asn Phe Leu Asp Glu Glu Val Gln Leu Lys Ser Glu Phe Glu Lys  
 210 215 220  
 Leu Ser Asp Ala Asp Lys Ile Ser Asn Tyr Lys Lys Asp Gly Lys Asn  
 225 230 235 240  
 Asp Lys Phe Val Gly Leu Val Ala Asp Ser Val Gln Met Lys Gly Ile  
 245 250 255  
 Asn Gln Tyr Ile Ile Phe Tyr Lys Pro Lys Pro Thr Ser Phe Ala Arg  
 260 265 270  
 Phe Arg Arg Ser Ala Arg Ser Arg Arg Ser Leu Pro Ala Glu Met Pro  
 275 280 285  
 Leu Ile Pro Val Asn Gln Ala Asp Thr Leu Ile Val Asp Gly Glu Ala  
 290 295 300  
 Val Ser Leu Thr Gly His Ser Gly Asn Ile Phe Ala Pro Glu Gly Asn  
 305 310 315 320  
 Tyr Arg Tyr Leu Thr Tyr Gly Ala Glu Lys Leu Pro Gly Gly Ser Tyr  
 325 330 335  
 Ala Leu Arg Val Gln Gly Glu Pro Ala Lys Gly Glu Met Leu Ala Gly  
 340 345 350  
 Ala Ala Val Tyr Asn Gly Glu Val Leu His Phe His Thr Glu Asn Gly  
 355 360 365  
 Arg Pro Tyr Pro Thr Arg Gly Arg Phe Ala Ala Lys Val Asp Phe Gly  
 370 375 380  
 Ser Lys Ser Val Asp Gly Ile Ile Asp Ser Gly Asp Asp Leu His Met  
 385 390 395 400  
 Gly Thr Gln Lys Phe Lys Ala Ala Ile Asp Gly Asn Gly Phe Lys Gly  
 405 410 415  
 Thr Trp Thr Glu Asn Gly Ser Gly Asp Val Ser Gly Lys Phe Tyr Gly  
 420 425 430  
 Pro Ala Gly Glu Glu Val Ala Gly Lys Tyr Ser Tyr Arg Pro Thr Asp  
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 Ala Glu Lys Gly Gly Phe Gly Val Phe Ala Gly Lys Lys Glu Gln Asp  
 450 455 460

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 <212> PRT  
 <213> N. meningitidis

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Gln Ala Gly Ser Gln Gly Gln Gly Ala Pro Ser Ala Gln Gly Gly Gln	35	40	45
Asp Met Ala Ala Val Ser Glu Glu Asn Thr Gly Asn Gly Gly Ala Ala	50	55	60
Ala Thr Asp Lys Pro Lys Asn Glu Asp Glu Gly Ala Gln Asn Asp Met	65	70	75
Pro Gln Asn Ala Ala Asp Thr Asp Ser Leu Thr Pro Asn His Thr Pro	85	90	95
Ala Ser Asn Met Pro Ala Gly Asn Met Glu Asn Gln Ala Pro Asp Ala	100	105	110
Gly Glu Ser Glu Gln Pro Ala Asn Gln Pro Asp Met Ala Asn Thr Ala	115	120	125
Asp Gly Met Gln Gly Asp Asp Pro Ser Ala Gly Gly Glu Asn Ala Gly	130	135	140
Asn Thr Ala Ala Gln Gly Thr Asn Gln Ala Glu Asn Asn Gln Thr Ala	145	150	155
Gly Ser Gln Asn Pro Ala Ser Ser Thr Asn Pro Ser Ala Thr Asn Ser	165	170	175
Gly Gly Asp Phe Gly Arg Thr Asn Val Gly Asn Ser Val Val Ile Asp	180	185	190
Gly Pro Ser Gln Asn Ile Thr Leu Thr His Cys Lys Gly Asp Ser Cys	195	200	205
Ser Gly Asn Asn Phe Leu Asp Glu Glu Val Gln Leu Lys Ser Glu Phe	210	215	220
Glu Lys Leu Ser Asp Ala Asp Lys Ile Ser Asn Tyr Lys Lys Asp Gly	225	230	235
Lys Asn Asp Gly Lys Asn Asp Lys Phe Val Gly Leu Val Ala Asp Ser	245	250	255
Val Gln Met Lys Gly Ile Asn Gln Tyr Ile Ile Phe Tyr Lys Pro Lys	260	265	270
Pro Thr Ser Phe Ala Arg Phe Arg Arg Ser Ala Arg S			